

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2017

Subject Code:130903

Date:29/11/2017

Subject Name: Electrical and Electronics Measuring Instruments

Time: 10:30 AM to 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Define & explain the following terms: **07**
(1) Accuracy (2) precision (3) sensitivity .
- (b)** State and explain different types of Voltage standards. **07**
- Q.2 (a)** Describe the construction and working of an electro-dynamometer type instrument? **07**
- (b)** Differentiate between Spring control and Gravity control methods used to produce the controlling torque. **07**
- OR**
- (b)** Explain various methods of providing damping torque in an indicating instruments. **07**
- Q.3 (a)** Explain in detail the construction and working of D'Arsonval Galvanometer. Also derive the torque equation for the same. **07**
- (b)** Explain the principle of hot-wire type instrument and give their limitations. **07**
- OR**
- Q.3 (a)** State and explain errors in induction watt hour meter. **07**
- (b)** Give the advantages and dis-advantages of Electrostatic instruments. **07**
- Q.4 (a)** Describe with a circuit diagram operation of an electronic voltmeter using differential amplifier. **07**
- (b)** Using expression for torque in single phase induction type meters, Show that the total no of revolutions made by its disc during a particular time is proportional to the energy consumed. **07**
- OR**
- Q.4 (a)** Show that in two wattmeter method of power measurement for 3-Ø balanced load system, the total power consumed is the sum of reading of two wattmeters. **07**
- (b)** Explain with neat diagram working of Synchroscope. **07**
- Q.5 (a)** Write a short note on digital tachometer **07**
- (b)** Write a short note on Weston frequency meter. **07**
- OR**
- Q.5 (a)** Explain construction and working of a maximum demand indicator. **07**
- (b)** Explain working of Drysdale-Tinsley polar type a.c. potentiometer. **07**
